

THE  
UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
AND  
NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION  
AND  
AGRICULTURAL RESEARCH DIVISION,  
INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES  
UNIVERSITY OF NEBRASKA  
ANNOUNCE

THE RELEASE OF 'MANSKA' PUBESCENT INTERMEDIATE WHEATGRASS

Parent clones for 'MANSKA' pubescent intermediate wheatgrass [*Thinopyrum intermedium* subsp. *barbulatum* (Schur) Barkw. & Dewey] were selected by personnel at the USDA-ARS Northern Great Plains Research Laboratory, Mandan, ND. MANSKA has been performance tested as Mandan **I2781** by USDA-ARS and the North Dakota Agricultural Experiment Station at Mandan, Fargo, Streeter, and Williston, ND; by USDA-ARS and the Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska, at Mead, North Platte, and Alliance, Nebraska; and by Agriculture Canada at Indian Head and Swift Current, Saskatchewan; Lethbridge, Alberta; and Kamloops, British Columbia. USDA-ARS in cooperation with the Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska, included **MANSKA** in grazing trials with yearling steers at Mead, NE. The name MANSKA is a contraction of Mandan and Nebraska and provides recognition to the USDA-ARS Northern Great Plains Research Laboratory, Mandan, ND and to USDA-ARS in cooperation with the University of Nebraska for development of the cultivar. The USDA-SCS Plant Materials Center, Bismarck, ND and the Foundation Seed Division, Department of Agronomy, University of Nebraska, Lincoln, NE are responsible for production of foundation seed. MANSKA is being released jointly by USDA-ARS, USDA-SCS, the North Dakota State Agricultural Experiment Station, and the Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska.

MANSKA was derived from 116 plant selections from a hexaploid ( $2n=6x=42$ ) source population that consisted of 5160 individually-spaced plants from 11 different seed lots of 'Mandan 759' pubescent intermediate wheatgrass. The percentage of plants with pubescent seed heads varied from 20 to 75% among the 11 different seed lots of Mandan 759, indicating that most of the seed lots had been subjected to outcrossing or seed admixture with glabrous plants in the intermediate wheatgrass complex. One hundred twenty plants were selected from the source population based on plant vigor, pubescence, and resistance to leaf-spot diseases, primarily *Cochliobolus sativus* Ito & Kurib. These 120 selections were established in a

6-replicate polycross nursery, and polycross progenies were evaluated for resistance to leaf-spot disease (*C. sativus*), spring recovery, nutritional quality, and forage and seed yields. Equal quantities of seed from 116 parent entries in the polycross nursery were composited to produce the experimental strain Mandan 12781 (MANSKA) and to establish a breeder seed field. Agronomic performance of Mandan 12781 was compared with other experimental strains and check cultivars in local, state, and regional tests. Weight gains of yearling steers were assessed at Mead, Nebraska in a grazing trial that included Mandan 12781 and three other intermediate wheatgrass entries. Cultivar release of Mandan 12781 and the name MANSKA were recommended October 22, 1991 by the Cultivar Review Committee of the North Dakota Interagency Research and Education Liaison Group. The Nebraska Forage Crops Variety Release Committee voted to participate in a joint release of MANSKA.

High nutritive value is the primary advantage of MANSKA over current intermediate wheatgrass cultivars. In tests at Mandan, MANSKA averaged significantly higher ( $P \leq .05$ ) in vitro digestible organic matter (IVDOM) at anthesis than the commonly grown check cultivar 'Oahe' (620 vs 563 g kg<sup>-1</sup>). In vitro dry matter digestibility (IVDMD) at anthesis was significantly ( $P \leq .05$ ) higher for MANSKA than Oahe (590 vs 573 g kg<sup>-1</sup>) when averaged over two years and three test sites in Nebraska. At Mead, Nebraska, daily gains of yearling steers averaged 1.22 and 1.06 kg, respectively, for MANSKA and Oahe ( $P \leq .05$ ) over two grazing seasons at a stocking rate of 7.4 steers ha<sup>-1</sup>. Weight gains for the two grazing periods averaged 298 and 257 kg ha<sup>-1</sup>, respectively, for MANSKA and Oahe ( $P \leq .05$ ). Dry matter yields averaged over 15 station-years at four test sites in North Dakota were 4226, 4228, and 4509 kg ha<sup>-1</sup>, respectively, for MANSKA, Oahe, and 'Reliant', a 6% advantage (non significant) for the recently released cultivar, Reliant (formerly Mandan experimental 11813). In Nebraska, dry matter yields from 8 station-years at three test sites averaged 5750 and 6050 kg ha<sup>-1</sup> for MANSKA and Oahe, a 5% yield advantage (NS) for Oahe. Seed yields averaged over 12 station-years at four test sites in North Dakota and Saskatchewan were 427, 469, and 489 kg ha<sup>-1</sup>, respectively, for MANSKA, 'Chief' (check cultivar), and Reliant, a 13% advantage ( $P \leq .05$ ) for Reliant over MANSKA.

MANSKA is recommended for grazing and hay in regions of the northern and central Great Plains where annual precipitation averages more than 350 mm (14 inches). No data exist on long-term persistence of MANSKA under grazing. Based on performance of other intermediate wheatgrass cultivars, maintenance of MANSKA at a high stand density under grazing would likely require prudent management to insure adequate fall-season recovery, especially when stressed from drought or exposed to high levels of winter stress in the northern Great Plains.

Breeder seed of MANSKA pubescent intermediate wheatgrass will be maintained at the USDA-ARS Northern Great Plains Research Laboratory, P.O. Box 459, Mandan, ND 58554. One generation each of foundation and certified seed increase beyond breeders seed is authorized. Foundation seed will be available from the USDA-SCS Plant Materials Center, P.O. Box 1458, Bismarck, ND 58502 and the Foundation Seed Division, Department of Agronomy, University of Nebraska, Lincoln, NE 68583.

Release date for publicity purposes shall be effective on the date of final signature on this release notice.

M. E. Carter APR 16 1992

William J. Hartman 4-6-92

Administrator  
United States Department of Agriculture  
Agricultural Research Service  
Washington, DC

Chief  
United States Department of Agriculture  
Soil Conservation Service  
Washington, DC

H. P. Lund 3-2-92

William J. Hartman, acting 3/5/92

Dean and Director  
North Dakota Agricultural  
Experiment Station  
Fargo, ND

State Conservationist  
United States Department of Agriculture  
Soil Conservation Service  
Bismarck, ND

Darrell W. Nelson 2/27/92

Donald S. Madala 3/6/92

Dean and Director  
Agricultural Research Division  
Institute of Agriculture and  
Natural Resources  
University of Nebraska  
Lincoln, NE

State Conservationist  
United States Department of Agriculture  
Soil Conservation Service  
Lincoln, NE